

STATE OF NORTH CAROLINA)
ex rel. Roy Cooper Attorney General,)

Plaintiff,)

vs.)

TENNESSEE VALLEY AUTHORITY,)

Defendant.)

Case No.: 1:06 CV 20

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BACKGROUND

The State of North Carolina (“the State”) brought this common law nuisance claim against the Tennessee Valley Authority (“TVA”) to address excessive emissions of air pollutants from TVA’s coal-fired power plants (“power plants”) in Tennessee, Alabama, and Kentucky. TVA operates 11 coal-fired power plants in these states, consisting of 59 electric generating units (“EGUs”). Air pollution from TVA’s power plants has caused, and continues to cause, significant adverse effects on health and welfare, and the environment in North Carolina and the region. TVA has long known about the adverse impacts of its emissions. Nonetheless, TVA has failed to commit to making necessary emissions reductions, even though reasonable, affordable, and cost effective pollution control devices are readily available.

TVA’s power plants emit sulfur dioxide (“SO₂”), nitrogen oxides (“NO_x”), particulate matter (“PM”), and mercury. NC Ex. 443¹ at Resp. No. 5. North Carolina will show at trial that TVA is one of the United States’ highest emitters of SO₂ and NO_x, and biggest contributors to fine particulate

¹ All “NC Ex. ___” citations refer to North Carolina’s trial exhibits, as identified by Plaintiff North Carolina’s Trial Exhibit List. Other previously filed documents will be cited as “Doc. No ___” with page references as they appear in the original documents.

matter (“PM_{2.5}”) levels in the region. Air quality modeling establishes that TVA’s emissions contribute substantially to air pollution in North Carolina and the region.

TVA’s emissions harm human health and the environment. Downwind from TVA’s power plants, SO₂ and NO_x form sulfates and nitrates in the atmosphere. Sulfates and nitrates are major components of PM_{2.5} in the southeast United States.

At trial, North Carolina will show that direct exposure to TVA’s pollutants and exposure to pollutants formed in the atmosphere from TVA’s emissions harm public health by causing increases in adverse health outcomes. These include premature mortality, cardiovascular and respiratory hospital admissions, asthma-related hospital admissions and emergency room visits, asthma exacerbations, chronic bronchitis, minor restricted activity days, and lost school days.

As TVA admits, these pollutants also contribute to impaired visibility, acid deposition, and other adverse environmental consequences. NC Ex. 443 at Resp. Nos. 4-7, 10-13. Additionally, NO_x reacts with compounds in the atmosphere to form ground-level ozone which is hazardous to human health and damages plants and sensitive ecosystems. *Id.* at Resp. Nos. 15-18.

TVA's power plants also emit a significant amount of mercury. Mercury is persistent in the environment, and, at sufficient concentrations, toxic to humans and wildlife. *Id.* at Resp. Nos. 21-22.

Visibility degradation, acidification, and mercury deposition in North Carolina and the region reduce the quality of treasured parks and recreation areas. TVA's continued contribution of pollutants adds to costs associated with the State's obligation to protect its air, waters, and public lands, which it holds in trust for the public, from air pollution.

In 2002 North Carolina enacted the Clean Smokestacks Act ("CSA") (2002 N.C. Sess. Law 4, codified in part at N.C. Gen. Stat. §143-215.107D)), which requires substantial reductions in emissions from large investor-owned public utilities operating coal-fired power plants in North Carolina beginning in 2007 and completed by 2013. NC Ex. 5. North Carolina will show that these required reductions are on schedule.

North Carolina's expert witnesses will demonstrate that TVA can reduce its emissions to reasonable levels, comparable to CSA emissions levels, by 2013. The reasonable emissions sought by North Carolina are consistent with levels being achieved by other electric utilities around the country.

North Carolina's pollution control engineering expert, Dr. Jim Staudt, will testify that he has evaluated TVA's current emissions and determined that they are unreasonable. He has estimated emissions from TVA's coal-fired power plants without installation of additional controls ("Base Case"), as well as with reasonable emissions rates comparable to those required by the CSA ("Control Case"). These controls would enable TVA to cap its system-wide annual emissions of SO₂ at 140,000 tons per year, and NO_x at 60,500 tons per year, and cap its annual emissions from the four plants closest to North Carolina – Bull Run, Kingston, Widows Creek, and John Sevier – at 18,500 tons of NO_x and 43,000 tons of SO₂. The controls to achieve these caps suggested by Dr. Staudt – primarily flue gas desulfurization ("scrubbers") and selective catalytic reduction ("SCRs") – are "fully demonstrated and available pollution control technologies" for controlling SO₂ and NO_x. 70 Fed. Reg. 61,081, 61,085 (Oct. 20, 2005). Dr. Staudt will demonstrate that these control case emission levels are achievable by detailing at least one way for TVA to reach these results by 2013. He will also show the costs of adding these controls to TVA's power plants using standard cost algorithms.

Messrs. Lyle Chinkin and Neil Wheeler will testify to their use of the

Community Multiscale Air Quality Model (“CMAQ”), the state-of-the-art air quality model, to show the impacts of TVA’s excess emissions on air quality and improvements to air quality in the southeast region that will occur if TVA reduces its emissions to reasonable levels as determined by Dr. Staudt. The resulting modeled improvements in ambient air quality provide the basis for North Carolina’s public health, ecology, and visibility experts to assess the net benefits to the southeast region, including North Carolina, from reasonable reductions of TVA’s emissions.

North Carolina’s medical experts, including Dr. David Peden, will establish that exposure to PM_{2.5} and ground level ozone causes adverse respiratory and cardiovascular health effects, including premature mortality, hospitalizations, disease exacerbation and related adverse outcomes. North Carolina’s public health experts, including Dr. Jonathan Levy, will describe the health impact assessment used to quantify the public health impacts from TVA’s current emissions and the public health benefits resulting from reductions in TVA’s excessive emissions. Dr. Levy calculated that if TVA reduces its emissions to levels North Carolina seeks, an estimated 1400 premature deaths will be avoided *each year* throughout the region; in North Carolina alone, the number of adverse health effects that would be avoided

each year include: 99 fewer premature deaths, 19,000 fewer asthma exacerbations, 47,000 fewer restricted activity days, and 2,300 fewer lost school days.

North Carolina's expert economist, Dr. Leland Deck, has compared the monetary value of select public health benefits against the cost of controlling TVA's emissions. He will testify that each year that TVA delays reasonably controlling its emissions, it produces a quantified public health cost of at least \$9,495,000,000 in the region and \$672,000,000 in North Carolina alone. Using 2013 population estimates, these public health costs rise regionally to \$10,856,000,000, and in North Carolina to \$792,000,000, and are expected to increase as population increases. He will further show that the economic benefits of the controls to public health alone heavily outweigh the costs to TVA.

In addition to the substantial public health benefits, significant environmental benefits will also accrue from reducing TVA's emissions. For example, North Carolina's visibility expert, John Molenaar, used WinHaze computer modeling, developed under National Park Service sponsorship, to display the air quality improvements from additional controls on TVA's system on scenic vistas in National Parks and recreation areas. Mr. Molenaar

will testify that substantial improvements to visibility will be seen at parks and wilderness areas in North Carolina and the region if TVA reduces its emissions as North Carolina seeks. North Carolina's expert in the ecological effects of air pollution, Dr. Charles Driscoll, analyzed the quantified reductions in nitrates, sulfates, and mercury deposition resulting from additional reasonable controls on TVA's system. He will testify that implementing these controls will reduce acidification and mercury contamination. The reductions in acid deposition to already acidified mountain areas will substantially improve the structure and function of sensitive and valued ecosystems in the Southeast. Other witnesses will substantiate these effects and the significance of the expected improvements.

Scenic views and environmental quality are significant drivers for tourism in North Carolina and the region. Witnesses will testify regarding the value of scenic views and visibility for tourism in North Carolina and the region. Their testimony will describe the vital importance of good air quality to a number of regional attractions, including the Appalachian Trail, the Blue Ridge Parkway, Great Smoky Mountains National Park ("GSMNP"), the North Carolina State Park System, Chimney Rock, Grandfather Mountain, and the Biltmore Estate. North Carolina officials will testify to the

importance of tourism to the State's economy.

North Carolina will further demonstrate that TVA's emissions are also unreasonable because much of TVA's excess emissions are violations of the New Source Review ("NSR") provisions of the Clean Air Act ("CAA"), due to major modifications of TVA's EGUs which required permitting and installation of modern emissions controls that TVA has not completed. TVA has known for many years that its emissions cause ecological damage, degrade water quality, impair visibility, and significantly impact some of the most popular National Parks and National Forests in the United States. Nonetheless, TVA has continued to emit pollutants at unreasonably high levels. This is also contrary to TVA's intended role as an environmental steward under the TVA Act.

North Carolina's financial expert, Dr. Sue Tierney, will show that it is financially feasible and reasonable for TVA to achieve the reduction in air pollution emissions sought by North Carolina by issuing bonds and very modestly increasing rates to recover the costs over the 30 year life of the pollution control equipment.

Based on the harms to public health and the environment caused by TVA's current excessive emissions, it is clear that the tailored injunctive

relief North Carolina seeks – reducing TVA’s current emissions to reasonable levels on an enforceable schedule by 2013 – is essential to provide reasonable protection for human health and the environment.

CONTROLLING LEGAL ISSUES

I. PUBLIC NUISANCE

In a nuisance action to abate pollution that affects people or resources in one state but originates in a different state, the law of the state where the source of the pollution is located governs the nuisance claim.² Accordingly, because TVA’s emissions originate in Alabama, Kentucky, and Tennessee, the laws of those states apply to North Carolina’s nuisance claim.³

This Court has already identified the three source states’ definitions of public nuisance, *North Carolina*, 2008 WL 553240, at *9, and has recognized

² *Int’l Paper Co. v. Ouellette*, 479 U.S. 481, 487, 493-99 (1987); *Her Majesty the Queen in Right of the Province of Ontario v. City of Detroit*, 874 F.2d 332, 343 (6th Cir. 1989); *North Carolina v. TVA*, 439 F. Supp. 2d 486, 497 (W.D.N.C. 2006), *aff’d on other grounds*, 515 F.3d 344 (4th Cir. 2008); *North Carolina v. TVA*, 2008 WL 553240, at *3 (W.D.N.C. Feb. 27, 2008).

³ Although North Carolina is not suing under North Carolina common law, North Carolina common law has nuisance requirements comparable to these source states concerning the abatement and control of air pollution. *See Morgan v. High Penn Oil*, 77 S.E. 2d 682, 690 (N.C. 1953); *Causby v. High Penn Oil Co.*, 93 S.E.2d 79, 82-84 (N.C. 1956); *Rhodes v. City of Durham*, 81 S.E. 938, 940 (N.C. 1914).

that “[e]ach of the source states has found that air pollution can create an actionable public nuisance,” *id.* The Court further recognized that the salient inquiry is whether the pollution “cause[s] ‘an unreasonable interference’ with ‘the public health, the public safety . . . the public comfort or the public convenience.’”⁴ North Carolina’s determination of TVA’s system-wide contribution to regional air pollution is the best evidence of whether emissions from its coal fired power plants cause such an unreasonable interference. *See* Doc. No. 73 at 24-25.

As this Court and TVA recognize, the definitions contained in the Restatement of Torts § 821B provide guidance to this Court’s analysis of whether an interference with a public right is unreasonable. 2008 WL 553240, at *10; Doc. No. 68-3 at 3. According to the Restatement, circumstances which bear on this question include:

- (a) Whether the conduct involves a significant interference with the public health, the public safety, the public peace, the public comfort or the public convenience, or

⁴ *North Carolina v. TVA*, 2008 WL 553240, at *10 (citing Restatement (Second) of Torts § 821B). *See also* *Wayne Co. v. Tennessee Solid Waste Disposal Control Bd.*, 756 S.W.2d 274, 283 (Tenn. App. 1988); *Sadler v. State*, 56 S.W.3d 508, 511-12 (Tenn. App. 2001); Ala. Code § 6-5-120 (1975); *Russell Corp. v. Sullivan*, 790 So.2d 940, 951 (Ala. 2001); *Morgan Cnty Concrete Co. v. Tanner*, 374 So.2d 1344, 1347 (Ala. 1979) *Roberie v. VonBokern*, 2006 WL 2454647, at *3 (Ky. Dec. 21, 2006) (Doc. No. 88-3).

(b) whether the conduct is proscribed by a statute, . . . or

(c) whether the conduct is of a continuing nature or has produced a permanent or long-lasting effect, and, as the actor knows or has reason to know, has a significant effect upon the public right.⁵

North Carolina will show that TVA's emissions of excessive pollutants unreasonably interfere with the public's right to clean air and a healthy environment in North Carolina and the region based upon all three of these factors. In evaluating the reasonableness of TVA's conduct, the Court should consider the full reaches of the harms arising from TVA's emissions. *See* Doc. No. 151 at 9-11, 12-17.

**A. TVA'S EMISSIONS SIGNIFICANTLY INTERFERE
WITH PUBLIC HEALTH, SAFETY, COMFORT, AND
CONVENIENCE**

North Carolina will show that emissions of pollutants from TVA's EGUs unreasonably interfere with public rights because they significantly interfere with public health, safety, comfort, and convenience. Restatement (Second) of Torts § 821B (2)(a).

⁵ Restatement (Second) of Torts § 821B (2)(a)-(c) (1979). The Restatement's comments clarify that these circumstances "are listed in the disjunctive; any one may warrant a holding of unreasonableness." *Id.*, cmt e. *See also Wayne County*, 756 S.W.2d at 283 (relying on Restatement § 821B public nuisance standards); *Tipler v. McKenzie Tank Lines*, 547 So.2d 438, 440 (Ala. 1989) (same); *Roberie*, 2006 WL 2454647, at *3 (same).

i. Interference with Public Health and Safety

TVA's excessive emissions cause significant detrimental health problems for residents of North Carolina and the region that could be avoided by TVA's installation of additional reasonable controls. As detailed above, North Carolina's public health experts will show that significant public health benefits will result each year TVA reduces its excessive emissions to more reasonable levels. North Carolina's experts will also testify that there are additional unquantified health impacts from TVA's emissions.

North Carolina further will show that these adverse health impacts interfere with the State's ability as a sovereign to protect the health of its residents, *North Carolina*, 439 F. Supp. 2d at 489; 2008 WL 553240, at *4, and drain state resources because North Carolina, through its Medicaid program, must bear certain costs of pollution-related illness. The State also suffers loss of school and work days due to such illness.

Excess air pollution also significantly diminishes the quality of life for many in North Carolina. Poor air quality forces North Carolina residents and visitors to limit their time and activities outdoors. North Carolinians have endured significant asthma related problems for many years. For example, local physicians in the Asheville area treat a large number of patients who

suffer air-pollution-induced asthma attacks, and advise their patients to remain indoors and limit their activities on poor air quality days.

ii. Interference with Public Comfort and Convenience

By degrading the environment, TVA's emissions interfere with public comfort and convenience. North Carolina will show at trial that pollutants formed from TVA's emissions impede visibility and contribute to acid deposition, which damages natural resources at many nationally treasured parks and scenic areas in North Carolina and the southeast region. These impacts hinder the public's appreciation of these attractions, burden economic interests associated with them, and impede the State's capacity to safeguard its environmental and economic interests.

Evidence will establish that air pollution degrades plant and animal life, which in turn also interferes with the preservation of natural areas for future generations and public appreciation of the natural areas and their beauty. The levels of acid deposition at GSMNP, which threatens plants and animals, are the highest of any National Park. NC Ex. 174 at 3. Many State Parks and natural areas in the Southeast, particularly those in sensitive high elevation areas, are also experiencing adverse environmental effects associated with high inputs of acidic deposition from SO₂ and NO_x emissions.

Air quality modeling shows TVA's power plant emissions significantly contribute to air pollution at these areas. The findings of the Southern Appalachian Mountains Initiative ("SAMI") corroborate North Carolina's modeling conducted for this case. From 1992 to 2002, SAMI (in which TVA was an active participant) studied the effects of pollution on ecosystems in the Southern Appalachian region. NC Ex. 443 at Resp. No. 35. The final SAMI report concluded, for example, that SO₂ reductions in Tennessee would most effectively reduce annual average sulfate particle mass at GSMNP and at the Joyce Kilmer, Slickrock, Shining Rock, and Linville Gorge areas in western North Carolina. *Id.* at Resp. No. 36; NC Ex. 1 at 3.17. SAMI results showed additional significant contributions from Alabama and Kentucky, among other states. *Id.* at 3.18, Figure 3.11. TVA's emissions have substantially contributed to ecosystem degradation at the GSMNP, as well as at other parks and wilderness areas in North Carolina, and will continue to have such impacts unless limited by the Court. Emissions from all of TVA's facilities combine to cause these harms.

Air pollution is of great concern to individuals and organizations charged with preserving and managing scenic areas, parks, and natural resources. Degradation of resources from air pollution requires those charged

with managing parks, public lands, and other scenic attractions to document, monitor, and analyze the impacts of air pollution. It also increases the burdens for those managing these areas. At the Biltmore Estate, for example, air pollution impairs efforts to preserve the Estate and requires additional safeguards for the health of the 1700 employees and livestock.

TVA's emissions also damage the waters and aquatic resources of North Carolina, and impede North Carolina's ability to protect and preserve its State-owned Parks and Recreational and Scenic Areas from pollution. State agencies must invest their resources to learn more about environmental problems associated with air pollution and to protect its land, water, and air. For example, North Carolina, as well as many other states in the region, maintains health advisories regarding fish consumption due to mercury contamination.

Adverse impacts on visitors' experiences at parks and natural attractions resulting from air pollution threaten the vitality of North Carolina's vibrant tourism industry. Tourism significantly contributes to the State's economy and tax revenues. Tourists come to North Carolina to rest and relax in a setting of natural, scenic beauty. SAMI found that "[p]eople value good visibility [where] they live . . . and in recreational areas" and that

the value they place on improving visibility is very substantial. NC Ex. 1, at 8.1, 8.5-8.6. Accordingly, preserving North Carolina's natural environment and spectacular mountain vistas from pollution is important for maintaining its tourist industry as well as for the local population.

This evidence clearly establishes that TVA's excessive emissions involve a significant interference with the public health, safety, comfort, and convenience.

B. TVA'S EMISSIONS ARE PROSCRIBED BY STATUTE

TVA's emissions also unreasonably interfere with public rights because they are proscribed by the CAA. Restatement (Second) of Torts § 821B (2)(b). In 2000, the U.S. Environmental Protection Agency ("EPA") found, and its Environmental Appeals Board affirmed, numerous significant violations of the CAA's NSR provisions by TVA. Obtaining NSR permits would have required TVA to install pollution control technology, resulting in significant emission reductions on affected units. The emissions EPA identified amount to over 100,000 tons per year. Additionally, TVA recently was held liable for more than 3,000 violations of CAA and state opacity requirements at its Colbert plant in Alabama. NC Ex. 363.

C. TVA HAS LONG KNOWN OF THE DELETERIOUS IMPACTS OF ITS POLLUTION, BUT HAS CONTINUED TO POLLUTE AT HIGH LEVELS

TVA's emissions also unreasonably interfere with public rights because for decades TVA has continuously emitted high levels of air pollution, despite its knowledge of the long-lasting detrimental effects of these emissions. Restatement (Second) of Torts § 821B(2)(c). TVA's power plants – built primarily between the early 1950's and the early 1970's – have been emitting large amounts of SO₂ and NO_x continuously since that time. NC Ex. 444 at Resp. No. 5. These emissions, as already described, have many detrimental and long-lasting public health and environmental impacts.

In 1995, in its own publication, TVA recognized that:

[e]arlier emission reductions are assumed to be environmentally preferable to equivalent reductions occurring later Earlier reductions in sulfate could produce earlier benefits to human health, visibility, aquatic impacts from acid deposition, and materials.

NC Ex. 443 at Resp. No. 38. In this same document, TVA recognized that NO_x emissions “contribute to the formation of acid rain and ozone,” that “human health impacts are most severe when ozone concentrations are high” and that its SO₂ emissions produce sulfates, which contribute to regional visibility impairment and can impact natural resources. *See also* NC Ex. 452

at 22:6-8, 199:14-200:9.

Moreover, TVA was an active participant in SAMI, which found that areas in western North Carolina, including the GSMNP, would benefit most from SO₂ reductions in Tennessee. NC Ex. 443 at Resp. No. 36. Gordon Park, TVA's Acting Manager of Environmental Affairs for its Fossil Group, testified that TVA has known since at least 2002 that secondary pollutants formed from TVA's emissions affect air quality in North Carolina. NC Ex. 450 at 35:1-9.

TVA has also known for many years that it has been having a substantial impact on PM_{2.5} levels in Knoxville, Tennessee, NC Ex. 449 at 110:9–113:10, which has been in nonattainment with the annual average PM_{2.5} National Ambient Air Quality Standard (“NAAQS”) since 2005 and the 8-hour ozone NAAQS since 2004. Stephen Mueller, TVA's Environmental Technologies Project Manager and Team Leader, testified that, based on what TVA learned through past modeling efforts, he would expect TVA's Kingston and Bull Run plants to have the greatest impacts on PM_{2.5} levels in the Knoxville area. NC Ex. 449 at 5:14-18, 112:17-113:4. SO₂ emissions, a major precursor to PM_{2.5}, remain uncontrolled at these plants.

TVA has also recognized that “[n]early ten million people visit the

[GSMNP] annually, in part for the panoramic mountain-top views [but that] visitors sometimes cannot fully appreciate these views because of regional haze.” NC Ex. 443 at Resp. No. 34. Nonetheless, in 2001, TVA announced that it would not complete scrubbers on Bull Run and Kingston, the two power plants closest to GSMNP until 2010. NC Ex. 174 at 4. TVA prolonged installation of these controls with full knowledge that reducing SO₂ emissions at these plants would improve the Park’s air quality by lessening haze, particle pollution, and acid rain. Because TVA’s excessive emissions are continuing in nature, and TVA knows they have a significant effect upon the public rights, TVA’s emissions are unreasonable and constitute a public nuisance. Restatement (Second) of Torts § 821B(2)(c).

In sum, North Carolina’s proof will establish the presence of all three of the circumstances that bear on whether TVA’s excessive emissions constitute an unreasonable interference with a public right. Accordingly, they constitute a public nuisance under the laws of each of the source states.

II. INJUNCTIVE RELIEF TO REDUCE TVA’S EMISSIONS ON AN ENFORCEABLE TIMETABLE IS APPROPRIATE

This Court has already determined that “[t]he source states specifically recognize injunctive relief as an equitable remedy available to the courts to

abate a public nuisance.” *North Carolina*, 2008 WL 553240, at *9. The common law of these states allows courts to balance the equities and grant injunctive relief based on the facts of each case and the measures that would appropriately abate the nuisance.⁶ In deciding whether or not to grant injunctive relief for a nuisance, courts weigh the benefits of granting the injunctive relief to abate the nuisance against the costs of abating the nuisance.⁷ The interests of third parties and the public are among the equities that are balanced to determine whether or not to award injunctive relief. *See* Doc. No. 151 at 17-20. In this case, the cost-benefit analysis yields only one conclusion: TVA’s harmful excessive air pollution must be reduced as soon

⁶ *See, e.g., Manis v. Gibson*, 2006 WL 521466 *8 (Tenn. App. Mar. 3, 2006) (controls to prevent flooding) (Doc. No 83-11); *Pate v. City of Martin*, 614 S.W.2d 46, 48 (Tenn. 1981) (all reasonable steps to terminate sewage lagoon odors); *Patterson v. Robinson*, 620 So.2d 609, 612 (Ala. 1993) (restricting operation of race track); *Slocum v. Broadus*, 585 So.2d 1356, 1356-57 (Ala. 1991) (barriers around operation’s exterior to prevent toxic dust and sand particles from damaging plaintiffs’ health and property); *Martin Bldg. Co. v. Imperial Laundry Co.*, 124 So. 82, 85 (Ala. 1929) (order that defendant ascertain methods to reduce smoke from plant to reasonable level); *Rice Packing Co. v. Ballinger*, 223 S.W.2d 356, 360 (Ky. 1949) (enjoining operation of slaughter house in manner that caused nuisance).

⁷ *Madison v. Ducktown Sulphur, Copper & Iron Co.*, 83 S.W. 658, 665 (Tenn. 1904); *Southwestern Const. Co. v. Liberto*, 385 So.2d 633, 636 (Ala. 1980); *Sam Warren & Son Stone Co. v. Gruesser*, 209 S.W.2d 817, 820-21 (Ky. 1948).

as possible.

Particularly in environmental cases, narrowly tailored injunctions are appropriate.⁸ In this case, the relief is quite narrowly tailored: [REDACTED]

[REDACTED]

[REDACTED]

In recognition that its emissions harm air quality, from time to time TVA announces its intention to construct pollution controls at some of its power plants, usually while under legal pressure to do so. However, TVA's air pollution control plans change often, NC Ex. 445 at 68:19-69:1; for example at the Colbert Plant in Alabama, TVA has significantly delayed its previously announced plans to construct a scrubber to reduce SO₂ emissions. The pollution controls TVA does install take an unreasonably long time to construct and place into operation and may not be continually operated without Court-ordered emissions caps. While some of the needed additional controls are under construction since North Carolina filed this lawsuit, the enforceable emissions caps North Carolina seeks are needed to ensure these controls are completed in a timely manner and properly operated and

⁸ See, e.g., *Pate*, 614 S.W.2d at 47-48; *City of Monticello v. Rankin*, 521 S.W.2d 79, 81-82 (Ky. 1975); *Martin Bldg Co.*, 124 So. at 85.

maintained.

North Carolina's expert, Dr. Staudt, has developed an abatement strategy that would allow TVA, within the next five years, to reduce its emissions to more reasonable rates by 2013. Dr. Staudt's testimony will demonstrate that achieving these levels is feasible for TVA because the technology, resources, and time are available for TVA to retrofit its units. In fact, [REDACTED]

[REDACTED] It is technically and financially feasible and reasonable for TVA to reduce its emissions to those sought by North Carolina by 2013.

North Carolina's expert, Dr. Staudt, will testify that the reasonable controls that North Carolina seeks can be achieved by imposing two sets of limits on TVA's SO₂ and NO_x emissions – a system-wide cap and a cap on emissions from the four plants closest to North Carolina – Bull Run, Kingston, Widows Creek, and John Sevier. The benefits to North Carolina and the region from ordering TVA to comply with the emissions caps sought

by North Carolina are substantial, and far outweigh the costs to TVA of implementing these controls. In contrast to the approximately \$9.5 billion in quantifiable public health benefits to individuals in the region per year, the costs to TVA of implementing emission controls would be only \$516 million per year. Indeed, the annual regional benefits are eighteen times greater than the costs. Additional benefits not included in this cost benefit calculation, ranging from additional public health benefits, to enhanced ecosystem health and improved visibility at scenic areas, will be detailed at trial. As but one example, the additional controls North Carolina seeks would result in perceivable improvement in visibility at GSMNP on 55 days each year, increasing the visual range by up to 68%. These benefits in North Carolina and throughout the region incontrovertibly shift the balance in favor of granting injunctive relief.

Accordingly, this Court should order TVA to cap its emissions as requested by North Carolina, so that its harmful excess emissions are abated on an enforceable timeframe using reasonable, affordable and cost effective pollution control devices.

III. TVA'S DEFENSES ALL LACK MERIT

Prior rulings of this Court have correctly rejected TVA's defenses

based upon nonjusticiability, *North Carolina*, 439 F. Supp. 2d 486, *aff'd*, 515 F.3d 344, North Carolina's authorization to bring this action, TVA's EGUs alleged compliance with federal and state statutes and regulations, venue, comparative fault, contributory negligence, and failure to state a claim for which relief can be granted, *North Carolina*, 2008 WL 553240. Furthermore, the reasoning this Court applied to reject TVA's summary judgment motion based upon North Carolina's pursuit of its section 126 petition also establishes that TVA's Ninth Defense – arguing that the 126 process bars this action – is not legally viable. *Id.* at *7-*8.

TVA's remaining defenses are likewise without merit. North Carolina indisputably has standing to pursue this action, because, as explained above, it has suffered injury in fact from TVA's excessive emissions of SO₂ and NO_x, and an injunction requiring TVA to install the requested pollution control equipment would abate this injury. *See Friends of the Earth v. Laidlaw Env'tl. Serv.*, 528 U.S. 167, 180-81 (2000) (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992)). Likewise, as discussed above, North Carolina's claim for equitable relief is clearly in the public interest. Finally, TVA has conceded that its equitable defenses do not pertain to the liability stage of this lawsuit. *North Carolina*, 2008 WL 553240, at * 7.

Even at the remedy stage, however, these defenses are factually and legally insufficient. *See* Doc. No. 55 at 17-24, Doc. No. 66 at 19-25. Consideration of North Carolina's own conduct – in passing the CSA and assuring that power plant emissions within its state are reduced to a reasonable level – fully supports its entitlement to the injunctive relief sought in this case.

TVA's motions in limine seeking to exclude much of North Carolina's evidence of TVA's contributions to air pollution in the region are similarly unavailing for the reasons set out in North Carolina's oppositions to those motions. For the Court's convenience, Attachment A hereto lists the pending motions in limine addressing evidentiary issues.

CONCLUSION

Plaintiff North Carolina appreciates this Court's consideration of the above matters in the trial of this case.

Dated: July 7, 2008

Respectfully Submitted,

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CERTIFICATE OF SERVICE

I certify that on July 7, 2008, I electronically filed the foregoing document with the Clerk of Court using the CM/ECF system which will send notification of such filing by operation of the Court's electronic filing system to the following:

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**ATTACHMENT A
NORTH CAROLINA'S LIST OF PENDING
MOTIONS IN LIMINE**

DOC. NUMBERS¹	PENDING MOTIONS
107, 116, 126, 90, 93, 94	TVA's Motion in Limine to Exclude Testimony of Bruce Buckheit
108, 108-2, 117, 127	TVA's Motion in Limine to Exclude PM _{2.5} (Premature Mortality Calculation)
109, 109-2, 123, 125	North Carolina's Motion to Partially Exclude the Opinion Testimony of Anne E. Smith
110, 111, 122, 128, 129	North Carolina's Motion in Limine to Exclude the Opinion Testimony of Ronald D. Nash
142, 143, 151, 152	TVA's Motion to Exclude Evidence of Air Quality Impacts in States Other than North Carolina
144, 145, 153, 156	TVA's Motion <i>in Limine</i> to Exclude Testimony on Sulfate Deposition on Preemption Grounds
147, 147-2, 154 ²	North Carolina's Motion in Limine to Exclude the Reports of Tennessee Valley Authority's Proffered Expert Witnesses

¹ Document Numbers identified are for the parties' briefing; exhibit numbers are not identified here.

² North Carolina's Reply in further support of this motion has not yet been filed.